



101st and Utah Traffic Circle



Fall
2014

Staff Report

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2014 101st and Utah Traffic Circle Staff Report

This Staff report provides analysis of the traffic pattern changes resulting from the installation of a traffic circle at the intersection of W 101st Street and Utah Avenue. The traffic circle has been in-place since the summer of 2011.

Background

Prior to the installation of the traffic circle the intersection of 101st Street and Utah Avenue was an uncontrolled 4-way intersection. Staff had for heard concerns for some time about this intersection's safety from neighborhood residents. The crashes at this intersection, about one reported crash per year, were infrequent yet persistent and reason to further investigate the intersection.

Traffic data was gathered and evaluated to try to determine the causes of the crashes. A detailed before and after data analysis is provided within this report.

The data showed that although the intersection is a 4-legged uncontrolled intersection and the right-of-way is assigned to the driver who first approaches the intersection, some drivers were assuming the right-of-way belonged to the east-west traffic. This assumption appeared to lead to high entering speeds and severe crashes, when they did happen.

Options

Staff looked for safety improvements that would help assign right-of-way and without increasing travel speeds on 101st street. A traffic circle was chosen for its ability to naturally assign right-of-way, with every entering vehicle yielding to vehicles in the intersection and traveling to the right around the circle, and for reducing vehicle speeds approaching and traveling through the intersection.

Trial Device Installation

On Wednesday, July 7, 2010, traffic engineering and traffic maintenance crews installed a temporary traffic circle at the intersection of Utah Ave S. and W 101st Street. The circle was constructed of molded rubber curbing that was bolted down to the asphalt and filled in with woodchips.



The temporary circle remained in place for approximately 5 months. During that time traffic data and neighborhood feedback. Was gathered. The results of the trial let to recommendation and approval for permanent

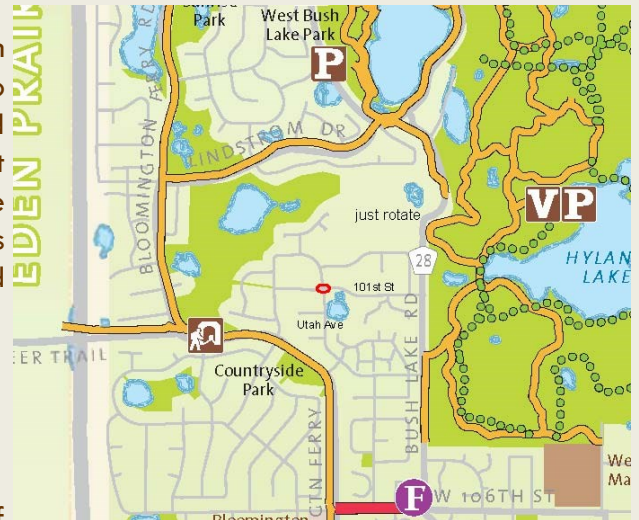
Timeline – 101st Street and Utah Avenue Traffic Circle



2014 101st and Utah Traffic Circle Staff Report

Project Area

The 101st and Utah neighborhood is bounded by Bloomington Ferry Road on the South and West and by Bush Lake Road to the East. The residents to the north of the intersection are “land locked” and use 101st street as their primary entrance/exit from the neighborhood. Closest collector/arterial roadway are Bloomington Ferry Road and Bush Lake Road. Land use is exclusively residential with a mix of single family home and multi-story condominiums on the east side near Bush Lake Road.



Data Collected

A complete data set was completed in the fall of Summer of 2009 to gain a baseline for traffic patterns before the temporary traffic circle was installed. The process was repeated again in Summer 2010 after the temporary traffic circle was installed. Data was again collected in summer of 2014 after the permanent traffic circle was in-place for 3 years. The “before” 2009 data is compared to the “after” 2014 data in the after study analysis.

After Study 2014

Crash Data

Prior to the installation of the traffic circle this intersection experienced approximately 1 reported crash per year over the previous 10 years. **Since the traffic circle has been installed there have been no reported crashes.** (Staff uses the State of Minnesota’s crash database to download all reported crashes for a particular intersection. Since 2011 city engineering staff has also been logging all crash calls from the BPD whether they are reported to the State or not. This information is reflected in our analysis on the intersection of 101st and Utah).

Traffic Data Synopsis

Vehicle Speeds

- All four approach's to the intersection are at or below the speed limit for average speed (30 mph) and 85% tile speed. The speeds on 101st Street have gone down after the construction of the circle.
- Average speed through the traffic circle is 22 mph (data collected with a speed laser gun)
- Total result of a **56% to 59% reduction in vehicles exceeding the speed limit on W 101st Street.**

2014 101st and Utah Traffic Circle Staff Report

Traffic Volume Data

Graphic to the right shows volume and speed data, black text shows 2009 data and colored text represents data collected in 2014.

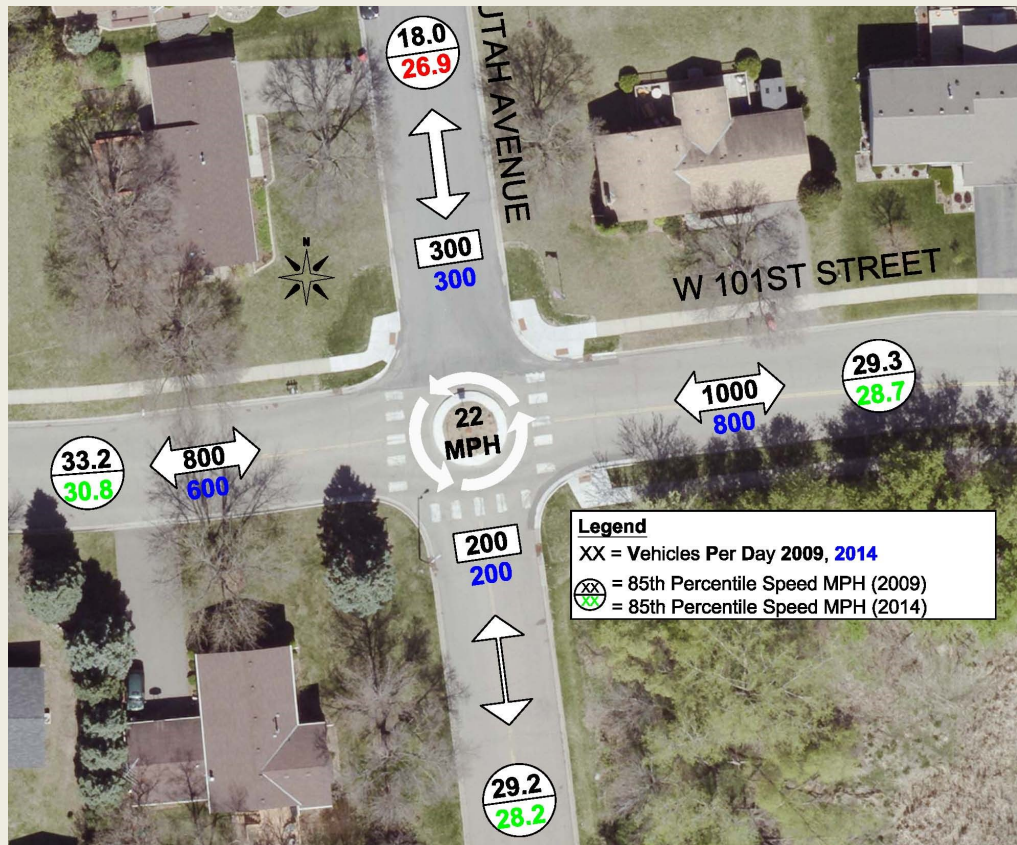
Volume reduction was not a stated goal for the addition of the traffic circle. Any reductions realized cannot be directly attributed to the traffic circle.

Utah Avenue:

Volumes along Utah Avenue remain unchanged from before the traffic circle was installed

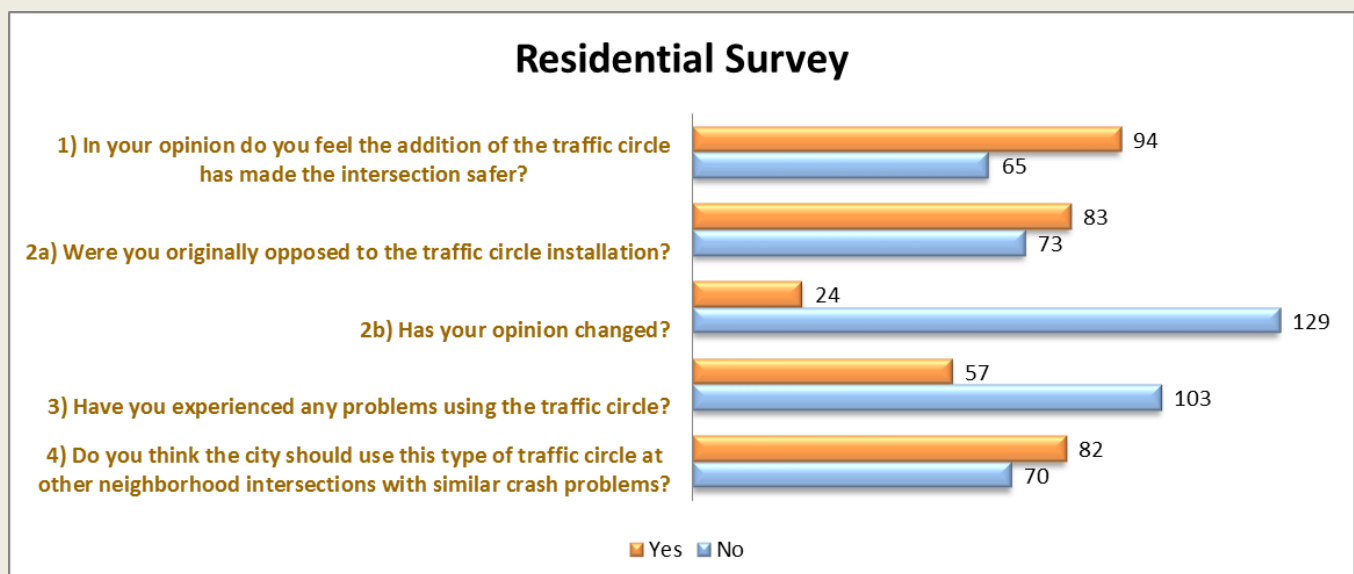
W 101st Street:

Volumes along W 101st Avenue show a 20%-25% decrease in vehicle traffic.



Resident Survey

In September of 2014 a survey was mailed out to the residents of the 101st and Utah neighborhood. The survey contained 4 questions regarding the traffic circle at the intersection of 101st and Utah. 496 individual surveys were mailed out to the neighborhood with a self addressed stamped envelope for use in returning the surveys to the City of Bloomington. Staff received 163 responses for a 33% response rate. The responses are summarized in the table below.



2014 101st and Utah Traffic Circle Staff Report

Physical condition

The traffic circles structure is mostly comprised of a concrete ring with landscaping plants and mulch in the center. The concrete is in good condition with only some minor cracking on its surface along with some scuffs and tire marks. The landscaping plants are a slow growth, low maintenance variety. Staff has taken a few calls over the three years regarding the aesthetics of the plants and if they've died. These plants seem to take their time in the spring to grow, but so far seem to be healthy.



Summary

The installation of the traffic circle is working as anticipated and considered a successful safety improvement to this intersection.

Automobile crashes have been reduced from one reported crash per year to zero reported since its installation. Traffic speeds on all four approaches are now at or below the speed limit (30 mph). Traffic volumes on W 101st street have reduced by as much as 25%, volumes on Utah Avenue remain unchanged. The opinion survey revealed that a majority of the neighborhood (59%) feel the traffic circle made the intersection safer and that a majority (54%) also feels the city should use this type of device at other similar intersections.